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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,699	08/31/2001	David Marquardt	SFI 1000	2178

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EXAMINER
MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
1763	

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/943,699	MARQUARDT ET AL.	
	Examiner	Art Unit	
	Sylvia R MacArthur	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8/31/01 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Specifically the term "less than about" in claims 1 and 10 is a relative term, which renders the claim indefinite. The term "less than about" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

4. The use of the trademark name Ertalyte TX has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-7 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuta (GB 2336121).

Regarding claim 1: Masuta teaches a retaining ring with a resin portion101a/301a (plastic laminate) and an annular (toroidal shaped) portion 101b, 101b comprising a material with a higher mechanical strength (high stiffness material) see abstract. Figs. 1A,1B, 3A, and 3B illustrate a first substantially planar surface, an interior cylindrical surface and an outer cylindrical surface. The toroidal shaped component comprises a first thickness adjacent to the interior cylindrical surface and a second thickness greater than the first thickness adjacent the outer cylindrical surface. The plastic laminate has a first and second substantially parallel, substantially planar surfaces, the first substantially planar surface of the plastic laminate is attached to the first substantially planar surface of the toroidal shaped component.

Masuta fails to teach the dimension of the thickness of the plastic laminate.

Nevertheless, In re Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to design a plastic laminate to be thicker that the workpiece to ensure that the laminate does not wear down with polishing.

Regarding claim 2: Masuta cites that the high stiffness material is stainless steel, see page 4 lines 15 and 16.

Regarding claim 3: Refer to Figs. 1A, 1B, 3A, and 3B of Masuta to observe that the interior wall portion of 101a/301a is attached to the interior cylindrical surface.

Regarding claim 4: Refer to Figs. 1A, 1B, 3A, and 3B of Masuta to observe that the exterior wall portion is attached to the outer cylindrical surface of the plastic laminate.

Regarding claim 5: Masuta cites that the plastic laminate comprises PEEK according to page 12 lines10-15.

Regarding claim 6: The specification, page 6 of the present invention notes that Ertalyte TX is a two-phase material comprising PET and PTFE. Masuta teaches that the plastic laminate comprises PET and other engineering plastics, which would obviously include PTFE, as it is a suitable plastic laminate known for its chemical and physical properties in the harsh CMP environment, see page 12 lines 10-16.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to utilize a plastic laminate comprising PTFE as it is a well known suitable material of construction in the art of CMP processing due its mechanical strength and inert chemical properties in the CMP environment.

Regarding claim 7: Masuta teaches that the metal portion and plastic laminate portions are adhesive attached according to page 9 lines 12-14.

Regarding claim 10: Masuta teaches that the toroidal component comprises stainless steel and the plastic laminate is adhesively attached to the toroidal shaped component, according to page 9 lines 12-14.

Regarding claims 11-13: Refer to Figs. 1A,1B, 3A, and 3B of Masuta.

Regarding claim 14: The specification, page 6 of the present invention notes that Ertalyte TX is a two-phase material comprising PET and PTFE. Masuta teaches that the plastic laminate comprises PET and other engineering plastics, which would obviously include PTFE, as it is a suitable plastic laminate known for its chemical and physical properties in the harsh CMP environment, see page 12 lines 10-16.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to utilize a plastic laminate comprising PTFE as it is a well known suitable material of construction in the art of CMP processing due its mechanical strength and inert chemical properties in the CMP environment.

Regarding claim 15: Masuta cites that the plastic laminate comprises PEEK according to page 12 lines10-15.

7. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga et al (US 6,251,215).

Regarding claim 1: Zuniga teaches a retaining ring 110 (wear ring) with a lower portion 180 (plastic laminate) and an annular (toroidal shaped) upper portion 184 comprising a durable material (high stiffness material) see col. 5 lines 60-65. Figs. 2 and 3 illustrate a first substantially planar surface, an interior cylindrical surface and an outer cylindrical surface. The

toroidal shaped component comprises a first thickness adjacent to the interior cylindrical surface and a second thickness greater than the first thickness adjacent the outer cylindrical surface. The plastic laminate has a first and second substantially parallel, substantially planar surfaces, the first substantially planar surface of the plastic laminate is attached to the first substantially planar surface of the toroidal shaped component. Regarding the thickness of the plastic laminate is 200-400 mils or 5-10 mm, according to col. 6 lines 18-23.

Nevertheless, In re Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Note that Zuniga does teach in col. 6 lines 8-14 that the lower portion (plastic laminate) should be thick enough that the substrate does not brush against the adhesive layer when the carrier head chucks the substrate.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to design a plastic laminate to be thicker that the workpiece to ensure that the laminate does not wear down with polishing.

Regarding claim 2: Zuniga cites that the high stiffness material used to construct the toroidal shaped component comprises stainless steel, see col. 6 lines 30-36.

Regarding claim 3: Refer to Figs. 2 and 3 of Zuniga to observe that the interior wall portion of the plastic laminate 180 is attached to the interior cylindrical surface.

Regarding claim 4: Refer to Figs. 2 and 3 of Zuniga to observe that the exterior wall portion is attached to the outer cylindrical surface of the plastic laminate.

Regarding claim 5: Zuniga cites that the plastic laminate comprises PEEK according to col. 6 lines 1-4.

Regarding claim 6: The specification, page 6 of the present invention notes that Ertalyte TX is a two-phase material comprising PET and PTFE. Zuniga teaches that the plastic laminate comprises PET according to col. 6 lines 1-6. Zuniga would obviously include PTFE as it is a suitable plastic laminate known for its chemical and physical properties in the harsh CMP environment.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to utilize a plastic laminate comprising PTFE as it is a well known suitable material of construction in the art of CMP processing due its mechanical strength and inert chemical properties in the CMP environment.

Regarding claim 7: Zuniga teaches that the metal portion 184 and plastic laminate portions are bonded to an upper portion with an adhesive layer 186.

Regarding claim 8: Zuniga teaches that the adhesive layer comprises a slow-curing epoxy.

Regarding claim 9: Zuniga teaches that the bottom surface of the plastic laminate 180 may have a plurality of grooves 196 according to col. 6 lines 24-29.

Regarding claim 10: Zuniga teaches that the toroidal component comprises stainless steel and the plastic laminate is adhesively attached to the toroidal shaped component, according to col. 5 lines 47-49.

Regarding 11-13: Refer to Figs. 2 and 3 of Zuniga.

Regarding claim 14: The specification, page 6 of the present invention notes that Ertalyte TX is a two-phase material comprising PET and PTFE. Zuniga teaches that the plastic laminate comprises PET according to col. 6 lines 1-6. Zuniga would obviously include PTFE as it is a suitable plastic laminate known for its chemical and physical properties in the harsh CMP environment.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to utilize a plastic laminate comprising PTFE as it is a well known suitable material of construction in the art of CMP processing due its mechanical strength and inert chemical properties in the CMP environment.

Regarding claim 15: Zuniga cites that the plastic laminate comprises PEEK according to col. 6 lines 1-4.

8. Claims 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuta or Zuniga in view of the article by DSM.

The teachings of Masuta and Zuniga are discussed above.

Neither discusses the K-factor or coefficient of friction of their materials of construction for the plastic laminate.

Regarding claims 16 and 17:

The K factor or wear resistance factor is discussed in page 6 of the specification of the present invention the property values are dependent upon the material of construction of the plastic laminate. Such laminates as Ertalyte TX are discussed in the specification to comprise this magnitude of property values.

Regarding claims 18 and 19:

Recall Ertalyte TX is made of PET and PTFE. According to the article by DSM in the Material Property Comparison Table, Ertalyte PET-P has a coefficient of friction of 0.20. PTFE has a coefficient of friction of 0.10. Thus, Ertalyte TX meets the requirement of a coefficient of not more than 0.3.

Thus, it would have been obvious for one of ordinary skill in the art to choose a plastic laminate such as Ertalyte TX, which provides the mechanical properties suitable for CMP as quantified by the K factor and coefficient of magnitude.

Regarding claim 20: Masuta teaches that the toroidal component comprises stainless steel and the plastic laminate is adhesively attached to the toroidal shaped component, according to page 9 lines 12-14.

Regarding claim 21: Refer to the rejection of claim 18

Regarding claim 22: Masuta teaches that the plastic laminate is adhesively attached to the exterior cylindrical surface of toroidal shaped stainless steel component, according to page 9 lines 12-14.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 703-306-5690. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Sylvia R MacArthur
Patent Examiner
Art Unit 1763

Sylvia R MacArthur
8/28/03